period by the net present value of the uninflated total capital investment. This results in a levelized inflation factor

The above operation is conducted to develop a capital cost inflation factor that will be applied to the depreciation, cost of money, and income tax factors and an operating expense inflation factor that will be applied to the equipment maintenance factor. The choice of the inflation index to be used in the formula is important. Some LECs develop their own "Telephone Plant Indexes" for each USOA account, using company specific historical data and projections. In keeping with the guiding principles, Staff has chosen to use *publicly available* data suitable for a *conservative* estimate of expected inflation. For the capital cost inflation factor, Staff is using the Producer Price Index (PPI) for Telephone and Telegraph Apparatus (Series Id # PCU 3661) from the U.S. Department of Labor, Bureau of Labor Statistics. This index represents an aggregation of price indexes for a variety of telephone equipment and therefore can be applied to all USOA accounts rather than developing a specific inflation factor for each account. For the operating expense inflation factor, Staff is using the Consumer Price Index (CPI) U.S. City Average (CPI-U) from the U.S. Department of Labor, Bureau of Labor Statistics. The choice of this index relies on the assumption that operating expenses are primarily labor, and wages for labor are closely related to prices for consumers. For each index, Staff calculated the average annual increase between 1992 and 1994. Staff then uses that value to represent the expected average annual increase between 1995 and 1997. When 1995 data is available, Staff will update its calculation to provide an index for the 1996 to 1998 planning period. Using SWBT's cost of money, the inflation indexes just described, and proportional investment additions over the planning period, Staff calculates a capital investment inflation factor of 1.0130, and an operating expense inflation factor of 1.0359. Staff recommends that the capital investment inflation factor of 1.0130 and the operating expense inflation factor of 1.0359 be applied where appropriate. SWBT has indicated its willingness to apply the inflation factors developed by Staff.

2. Notification of the Existence of Common Costs.

In the Methodology statement on the first page of the BNF LRIC studies, SWBT makes the statement, 'This study did not seek to identify any family (costs common to groups of BNFs) costs, which might exist These costs, if any, are identified in the study of family costs prescribed in the cost rule." Staff believes this statement, and the behavior it implies, are unacceptable. Section 23.91(h), relating to the identification of BNFs and groups of services that share significant common costs, states, '[t]he company shall identify all instances in which BNFs and groups of services share significant common costs and shall calculate such common costs." In Docket Nos. 12475 and 12481, "Application of SWBT and GTE-SW for Approval of Workplans Pursuant to Subst. R. 23.91," the LECs claimed that they could not identify all common costs at the workplan stage of the costing process. The LECs claimed that only when they began conducting BNF studies would they be able to ascertain whether a given BNF shared costs with other BNFs. Now the LECs are engaged in conducting BNF studies. Staff recommends that the ALJ order the LECs, upon the filing of BNF and service LRIC studies, to make an affirmative statement of whether they believe that the BNF or service shares costs with other BNFs or services. Staff understands that SWBT may not know *how many* other BNFs or services share the common cost and SWBT may not be able to *calculate* the common cost until the BNF or service LRIC studies for all BNFs or services that share the cost are conducted However, SWBT should know after conducting a specific BNF or service LRIC study whether the specific BNF or service shares costs at all, and that information should be presented in a clear manner in the narrative that accompanies the specific LRIC study.

3. Extension of Time for SWBT's July LRIC Studies

Because of the necessary changes to the LRIC studies currently on file required by Staff's recommendation, and because the LRIC studies SWBT has due on July 8th will be due very shortly after the ALJ's ruling on these issues, Staff believes SWBT should have the option of filing the July 8th studies on August 8th if SWBT so requires.

II. SUMMARY OF RECOMMENDATIONS

SWBT has indicated their willingness to implement all of Staff's recommendations other than the recommendation regarding the identification of common costs. The ALJ should order SWBT to file amended BNF LRIC studies within 60 days of the ALJ's order. In the amended studies and in all future BNF LRIC studies SWBT should:

1. Include "breakage" in the model office module calculations. (See page 18 of this recommendation)

2. Correct the mathematics errors in the feature investment module calculations. (See page 19 of this recommendation)

3. Delete the Building Investment factor. (See page 24 of this recommendation)

4. Recalculate the Depreciation, Cost of Money, and Income Tax factors using the depreciation parameters prescribed in the 1995 three-way meeting between SWBT, the FCC, and the commission. (See page 29 of this recommendation)

5. Delete the Building and Grounds Maintenance factor. (See page 36 of this recommendation)

6. Delete the Administration factor. (See page 36 of this recommendation)

7. Delete the "Other Taxes" portion of the Miscellaneous Tax factor. (See page 37 of this recommendation)

8. Apply the inflation factors developed by Staff. (See page 39 of this recommendation)

9. Make an affirmative statement on the presence or lack thereof of common costs for the BNF. (See page 42 of this recommendation)

10. Be allowed to file the July 8th, 1995 LRIC studies on August 8th, 1995, if necessary (See page 43 of this recommendation)

MARGINAL COST AND CAPACITY COST

By J. Lee and V. Schmid-Bielenberg

This paper examines in detail how long run marginal investment (LRMC) approaches capacity cost (CC) under certain conditions. This relationship will be derived in two different situations.

1. Constant Added Demand

In order to derive the relationship between the long run marginal cost and the capacity cost, the following nomenclature is used:

q = capacity of machine or equipment unit (CAP)

β = investment of machine or equipment unit (INV)

ℓo = initial demand at $t=0$

d = an increase in demand

δ = $\ell n(1+i)$

i = interest rate

t_j = points in time at which an additional machine or equipment unit is added

CC = capacity cost

PVC = change in present value of investment

PVD = change in present value of demand

MC = marginal investment

LRMC = long run marginal investment

Figure 1 represents the most commonly experienced situation where the constant new demand triggers an earlier new investment than a baseline demand

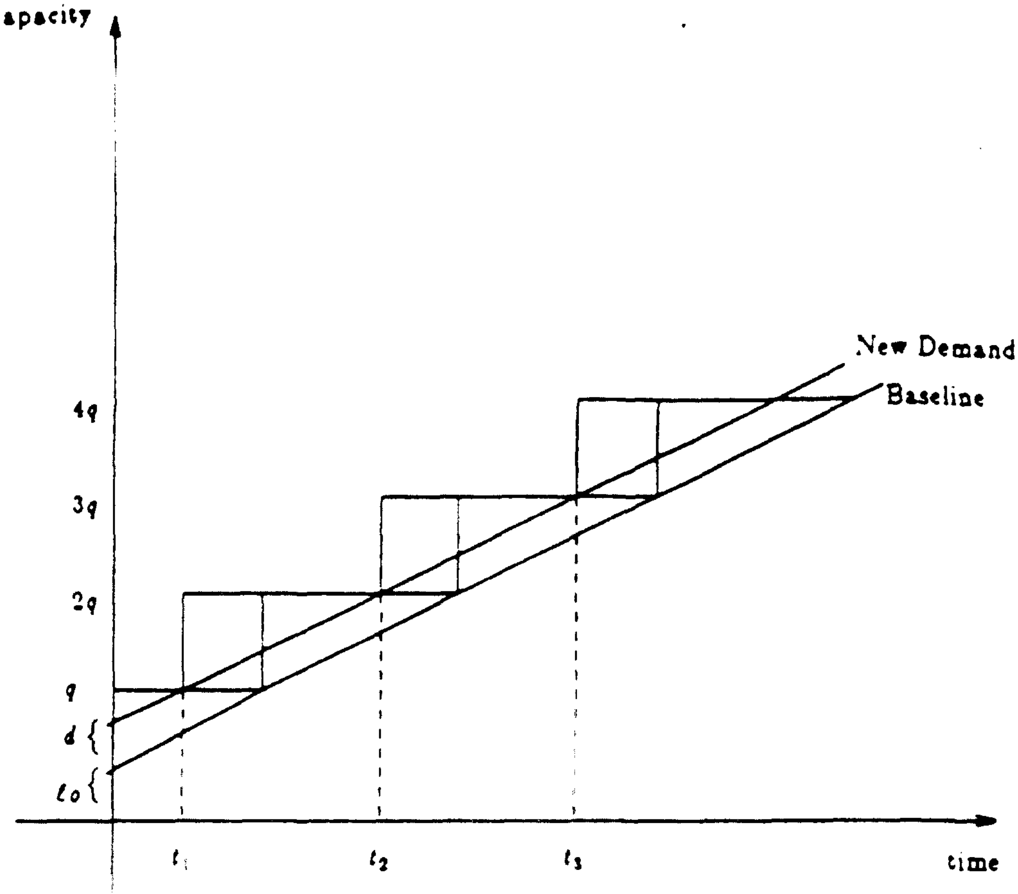

Figure 1. Constant Added Demand

The capacity cost (CC) is defined to be:

$$CC = \frac{\text{investment of machine or next equipment unit}}{\text{capacity of machine or next equipment unit}} = \frac{g}{q} = \frac{INV}{CAP} \tag{1.1}$$

From the economic theory the marginal investment (MC) is defined as:

$$MC = \frac{\text{change in investment}}{\text{change in demand}} = \frac{PVC}{PVD} \tag{1.2}$$

For mathematical convenience discrete compounding, $(1 + i)$, is transformed into continuous compounding e^{δ} by letting:

$$(1 + i) = e^{\delta} \tag{1.3}$$

By taking the natural log on both sides of the equation (1.3), one gets $\delta = \ell n(1 + i)$. One can always find a number δ such that $(1 + i) = e^{\delta}$, since $(1 + i) > 0$ and therefore e^{δ} can be used instead of $(1 + i)$ without loss of generality. Also, by the same reasoning,

$$\frac{1}{(1 + i)} = (1 + i)^{-1} = e^{-\delta} \tag{1.4}$$

This continuous compounding will be utilized throughout the proofs.

To prove the equivalence of LRMC and CC, we assume that an increase in demand (d) is not greater than the remaining capacity of the machine or the next equipment unit at $t=0$ $(0 \leq d \leq q-\ell o)$. Then, the first addition of a new machine or equipment unit will be made when,

$$\ell o + dt_1 = q \quad \text{and}$$

$$t_1 = \frac{q-\ell o}{d} \tag{1.5}$$

Similarly, a second edition will be made when,

$$\ell o + dt_2 = 2q \quad \text{and}$$

$$t_2 = \frac{2q-\ell o}{d} \tag{1.6}$$

In general,

$$t_j = \frac{jq-\ell o}{d} \quad , \; j = 1,2, \ldots \infty \tag{1.7}$$

The constant added demand will trigger a new investment, β, for each period t_j $(j=1,2,\ldots,\infty)$. Therefore, the present value of investment (PVC) is determined as:

$$\mathrm{PVC} = \sum_{j=1}^{\infty} \beta \cdot \frac{1}{(1+i)^{t_j}}$$

$$= \sum_{j=1}^{\infty} \beta \cdot e^{-\delta t_j} \quad \text{, from (1.4)}$$

$$= \beta \cdot \sum_{j=1}^{\infty} e^{-\delta\left(\frac{jq-\ell_0}{d}\right)} \quad \text{, from (1.7)}$$

$$= \beta \cdot e^{\frac{\delta \ell_0}{d}} \cdot \sum_{j=1}^{\infty} e^{\frac{-j\delta q}{d}}$$

$$= \beta \cdot e^{\frac{\delta \ell_0}{d}} \cdot \frac{e^{\frac{-\delta q}{d}}}{1 - e^{\frac{-\delta q}{d}}} \quad \text{, by (A.1.3)} \tag{1.8}$$

The present value of demand is determined as:

$$\mathrm{PVD} = \int_0^{\infty} d \cdot e^{-\delta t}\, dt = \frac{d}{\delta} \tag{1.9}$$

Then, from the equations (1.8) and (1.9), the long run marginal investment (LRMC) is expressed as:

$$\mathrm{LRMC} = \frac{\mathrm{PVC}}{\mathrm{PVD}} = \frac{\delta \cdot \beta \cdot e^{\delta \ell_0}}{d} \cdot \frac{e^{\frac{-\delta q}{d}}}{1 - e^{-\delta q}} \tag{1.10}$$

Now, assume that the initial demand (ℓ_0) at $t=0$ is uniformly distributed over the interval $0 \le \ell_0 \le q$ (See A.2). Then,

$$\text{LRMC} = \frac{1}{q} \cdot \int_0^q \text{LRMC}\, d l_o \quad \text{by (A.2.2)}$$

$$= \frac{\delta \beta}{d} \frac{e^{\frac{-\delta q}{d}}}{1 - e^{\frac{-\delta q}{d}}} \left(\frac{1}{q} \int_0^q e^{\frac{\delta l_o}{d}}\, d l_o \right)$$

$$= \frac{\delta \beta}{d} \cdot \frac{e^{\frac{-\delta q}{d}}}{1 - e^{\frac{-\delta q}{d}}} \frac{1}{q} \cdot \frac{d}{\delta} \left(e^{\frac{\delta q}{d}} - 1 \right)$$

$$= \frac{\beta}{q} \cdot \frac{e^{\frac{-\delta q}{d}} \left(e^{\frac{\delta q}{d}} - 1 \right)}{1 - e^{\frac{-\delta q}{d}}}$$

$$= \frac{\beta}{q} \cdot \frac{1 - e^{\frac{-\delta q}{d}}}{1 - e^{\frac{-\delta q}{d}}}$$

$$= \frac{\beta}{q} \tag{1.11}$$

$$= \frac{\text{INV}}{\text{CAP}}$$

As can be seen from the equations (1.1) and (1.11), LRMC = CC.

2. Non-Constant Added Demand

In Figure 1, it is assumed that an added demand is constant in relation to the baseline demand. That is, the slope of new demand is the same as that of the baseline. In this section, we allow a demand growth rate. As can be seen in Figure 2, the slope of new demand is different from that of the base line.

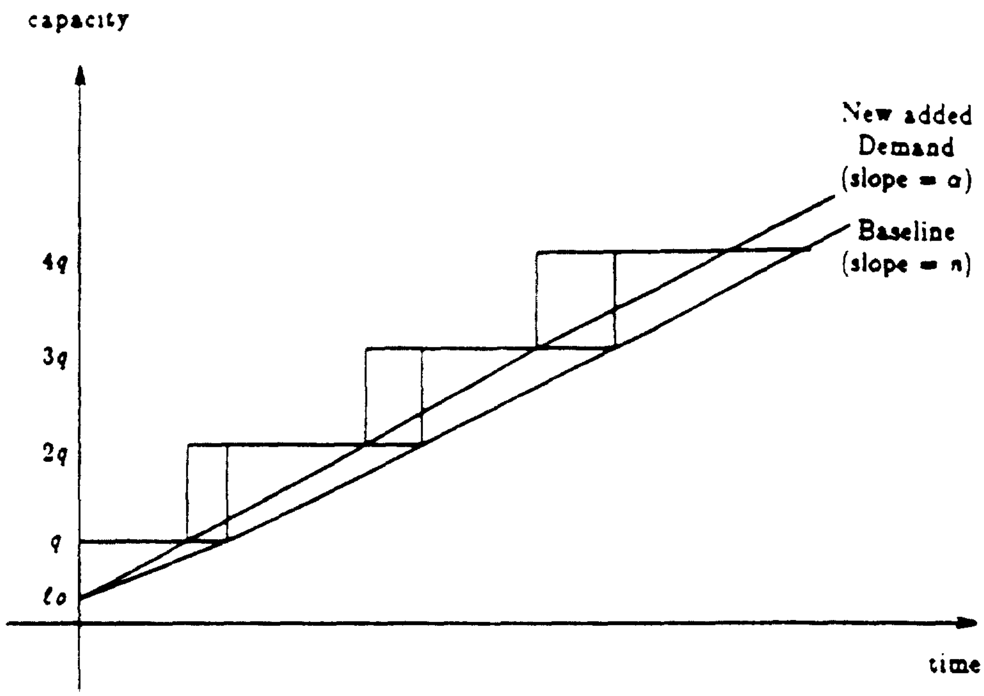

Figure 2. Non-Constant Added Demand (Constant Growth Rate of Added Demand)

Let,

q = capacity of machine or equipment unit (CAP)

β = investment of machine or equipment unit (INV)

ℓo = initial demand at $t=0$

η = slope of demand (baseline)

α = slope of new demand (with an increased demand)

i = interest rate

δ = $\ell n(1+i)$

CC = capacity cost

PVC = change in present value of investment

PVD = change in present value of demand

LRMC = long run marginal investment

As before, if we assume that an increase in demand at $t=0$ does not exceed the remaining capacity of the machine or equipment unit, we find that in general

$$\ell_0 + (\alpha-\eta)\, t_j = jq \quad \text{and}$$

$$t_j = \frac{jq - \ell_0}{\alpha-\eta} \quad , j = 1, 2, \ldots, \infty \tag{2.1}$$

The constant growth rate of added demand will trigger a new investment at the rate of ϑ for every t_j (ϑ, 2ϑ, 3ϑ, 4ϑ, ... for t_j). To calculate the PVC, we denote an arithmetic gradient, ϑ, in terms of a uniform series, $\frac{\vartheta}{\delta}$, for the case of perpetuity (See A.3). Then the PVC is determined as:

$$\text{PVC} = \sum_{j=1}^{\infty} \vartheta \cdot t_j\, e^{-\delta t_j} \tag{2.2}$$

$$= \sum_{j=1}^{\infty} \frac{\vartheta}{\delta} \cdot e^{-\delta t_j} \quad \text{, by (A.3.10)} \tag{2.3}$$

$$= \frac{\vartheta}{\delta} \cdot \sum_{j=1}^{\infty} e^{-\delta\left(\frac{jq-\ell_0}{\alpha-\eta}\right)}$$

$$= \frac{\vartheta}{\delta} \cdot e^{\frac{\delta \ell_0}{\alpha-\eta}} \cdot \sum_{j=1}^{\infty} e^{\frac{-jq\delta}{\alpha-\eta}}$$

$$= \frac{\vartheta}{\delta} \cdot e^{\frac{\delta \ell_0}{\alpha-\eta}} \cdot \frac{e^{\frac{-q\delta}{\alpha-\eta}}}{1 - e^{\frac{-q\delta}{\alpha-\eta}}} \quad \text{, by (A.1.3)} \tag{2.4}$$

To calculate the PVD, an arithmetic gradient series, $\alpha-\eta$, is expressed in terms of a uniform series $\frac{\alpha-\eta}{\delta}$. Then, the PVD is determined as:

$$\text{PVD} = \int_0^{\infty} (\alpha-\eta)\, t \cdot e^{-\delta t} \tag{2.5}$$

$$= \int_0^{\infty} \frac{\alpha-\eta}{\delta} \cdot e^{-\delta t}\, dt$$

$$= \frac{\alpha-\eta}{\delta^2} \tag{2.6}$$

From the equations (2.4) and (2.6),

$$\text{LRMC} = \frac{\text{PVC}}{\text{PVD}}$$

$$= \frac{\beta\,\delta}{\alpha-\eta}\;\frac{e^{\frac{-q\delta}{\alpha-\eta}}}{1-e^{\frac{-q\delta}{\alpha-\eta}}}\;e^{\frac{\delta\ell_o}{\alpha-\eta}}$$

Assuming ℓo is uniformly distributed over the interval, $O \leq \ell o \leq q$,

$$\text{LRMC} = \frac{1}{q}\cdot\int_0^q \text{LRMC}\; d\ell o$$

$$= \frac{\beta\delta}{\alpha-\eta}\cdot\frac{e^{\frac{-q\delta}{\alpha-\eta}}}{1-e^{\frac{-q\delta}{\alpha-\eta}}}\left(\frac{1}{q}\int_0^q e^{\frac{\delta\ell o}{\alpha-\eta}}\, d\ell o\right)$$

$$= \frac{\beta\delta}{\alpha-\eta}\cdot\frac{e^{\frac{-q\delta}{\alpha-\eta}}}{1-e^{\frac{-q\delta}{\alpha-\eta}}}\;\frac{\alpha-\eta}{q\delta}\cdot\left(e^{\frac{\delta q}{\alpha-\eta}}-1\right)$$

$$= \frac{\beta}{q}\cdot\frac{1-e^{\frac{-q\delta}{\alpha-\eta}}}{1-e^{\frac{-q\delta}{\alpha-\eta}}}$$

$$= \frac{\beta}{q} \tag{2.8}$$

$$= \frac{\text{INV}}{\text{CAP}}$$

From the equation (1.1) and (2.8), therefore, LRMC = CC

A. Appendix

A.1

(1) If $|\alpha| < 1$, then $\sum_{n=0}^{\infty} \alpha^n = \dfrac{1}{1-\alpha}$

proof: $\sum_{k=0}^{\infty} \alpha^k = 1 + \alpha + \alpha^2 + \alpha^3 + \cdots$

If we multiply both sides by $(1-\alpha)$,

$$(1-\alpha) \sum_{k=0}^{\infty} \alpha^k = (1-\alpha)(1 + \alpha + \alpha^2 + \alpha^3 + \cdots)$$

$$= (1 + \alpha + \alpha^2 + \cdots) - (\alpha + \alpha^2 + \alpha^3 + \cdots)$$

$$= 1$$

$$\sum_{k=0}^{\infty} \alpha^k = \frac{1}{1-\alpha} \qquad \text{(A.1.1)}$$

(2) If $|\alpha|<1$, then $\sum_{n=k}^{\infty} \alpha^n = \dfrac{\alpha^k}{1-\alpha}$

proof: $\sum_{n=k}^{\infty} \alpha^n = \alpha^k + \alpha^{k+1} + \alpha^{k+2} + \cdots$

If we multiply both side by $(1-\alpha)$,

$$(1-\alpha) \sum_{n=k}^{\infty} \alpha^n = (1-\alpha)(\alpha^k + \alpha^{k+1} + \alpha^{k+2} + \cdots)$$

$$= (\alpha^k + \alpha^{k+1} + \alpha^{k+2} + \cdots) - (\alpha^{k+1} + \alpha^{k+2} + \cdots)$$

$$= \alpha^k$$

$$\sum_{n=k}^{\infty} \alpha^n = \frac{\alpha^k}{1-\alpha} \qquad \text{(A.1.2)}$$

(3) In particukar, if $k=1$

$$\sum_{n=1}^{\infty} \alpha^n = \frac{\alpha}{1-\alpha} \qquad \text{(A.1.3)}$$

For these and other power series formula see CRC Handbook of Mathematical Sciences (1983)

A.2

Let x be a random variable which is uniformly distributed over the interval (a,b). If we define $y=f(x)$, the expected value of y (the mean of y), E(y), is found to be:

$$E(y) = \frac{1}{b-a}\int_a^b f(x)\,dx \qquad \text{(A.2.1)}$$

In particular, if LRMC is a function of ℓo which is uniformly distributed over the interval $(0,q)$,

$$\text{LRMC} = E\left[\text{LRMC}\,(\ell o)\right] = \frac{1}{q}\cdot\int_0^q \text{LRMC}\,(\ell o)\,d\ell o \qquad \text{(A.2.2)}$$

For more discussions, one is referred to Mood, Graybill and Boes (1974).

A.3

There are situations involving periodic payments that increase or decrease by constant increments from period to period. In this case, the growth increment, G per year, is termed a gradient. Since the increment is a constant amount, the progression is described as arithmetic. Here we examine a method of finding a uniform series U that is equivalent to a gradient series G. The uniform series U refers to the payments of equal amount for each period.

Let,

U = uniform series payments

G = arithmetic gradient increase

F = future value of lump sum payment

i = interest rate per compounding period

n = number of compounding periods

It can be found that, for the uniform series U

$$F = U\left(\frac{(1+i)^n - 1}{i}\right) \qquad (A.3.1)$$

or

$$\frac{F}{U} = \frac{(1+i)^n - 1}{i} \qquad (A.3.2)$$

For the arithmetic series, it can be found that:

$$F = \frac{G}{i}\left(\frac{(1+i)^n - 1}{i} - n\right) \qquad (A.3.3)$$

$$= \frac{G}{i}\left(\frac{F}{U} - n\right) \qquad (A.3.4)$$

Collier and Ledbetter (1988) discusses the derivation of (A.3.1) and (A.3.3) in detail.

In order to find the uniform series U in terms of G, we divide both sides of equation (A.3.4) by G:

$$\frac{F}{G} = \frac{1}{i}\left(\frac{F}{U} - n\right) \qquad (A.3.5)$$

By multiplying both sides of (A.3.5) by $\frac{U}{F}$,

$$\frac{F}{G}\cdot\frac{U}{F} = \frac{1}{i}\left(\frac{F}{U}\cdot\frac{U}{F} - \frac{U}{F}\cdot n\right) \quad \text{and} \qquad (A.3.6)$$

$$\frac{U}{G} = \frac{1}{i}\left(1 - \frac{U}{F}\cdot n\right)$$

But $\frac{U}{F}$ can be found from (A.3.2) as:

$$\frac{U}{F} = \frac{i}{(1+i)^n - 1} \qquad (A.3.7)$$

Substituting (A.3.7) into (A.3.6) yields:

$$\frac{U}{G} = \left(\frac{1}{i} - \frac{n}{(1+i)^n - 1}\right) \qquad (A.3.8)$$

Then, for the perpetual life, we let $n \to \infty$

$$\lim_{n \to \infty} \left(\frac{1}{i} - \frac{n}{(1+i)^n - 1} \right)$$

$$= \frac{1}{i} - \lim_{n \to \infty} \frac{n}{(1+i)^n - 1}$$

$$= \frac{1}{i} - \lim_{n \to \infty} \frac{1}{n(1+i)^{n-1}} \quad \text{using L'Hospital's rule}$$

$$= \frac{1}{i} \quad \text{, since } \lim_{n \to \infty} \frac{1}{n\,(1+i)^{n-1}} = 0 \tag{A 3 9}$$

Therefore, for $n \to \infty$, $\frac{U}{G} = \frac{1}{i}$ or

$$U = \frac{G}{i} \tag{A 3 10}$$

Collier and Ledbetter (1988) gives a good explanation on these derivations and some examples of its use.

ACKNOWLEDGEMENT

The authors would like to thank Kevin Holl who read the paper in detail and offered many helpful comments. The authors are, however, solely responsible for any error made in the paper

REFERENCES

[1] Chiang, A. C. (1974). *Fundamental Method of Mathematical Economics*. 2nd Edition, McGraw Hill.

[2] Collier, C. A. and Ledbetter, W.B. (1988). *Engineering Economic and Cost Analysis*. 2nd Edition, New York: Harper & Row Publishers.

[3] *CRC Handbook of Mathematical Sciences* (1983), 5th Edition, CRC Press Inc.

[4] Hayes, R. P. (1976). "*Feature Cost Methodology - Allocation of Getting Started Cost*", Bell Laboratories Memo, case 36279-52.

[5] Kahn, A. E. (1988). *The Economics of Regulation: Principles and Institutions*, New York: John Wiley & Sons.

[6] Mood, A. M., Graybill, F. A. and Boes, D. C. (1974). *Introduction to the Theory of Statistics*, 3rd Edition, McGraw Hill.

[7] Park, R. E. (1989). "*Incremental Costs and Efficient Prices with Lumpy Capacity - The Single Product Case*", R-3723-ICTF. RAND Corporation.

[8] Varian, H. R. (1978). *Microeconomic Analysis*, New York: W. W. Norton & Company, Inc.

PUCT Project No. 14561
Staff Comments and Recommendations

PROJECT NO. 14561

SOUTHWESTERN BELL TELEPHONE COMPANY'S APPLICATION FOR APPROVAL OF PERSONALIZED RING PER LINE-RESIDENCE/BUSINESS, ET AL., PURSUANT TO P.U.C. SUBSTANTIVE RULE §23.91	§ § § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

GENERAL COUNSEL'S COMMENTS CONCERNING SOUTHWESTERN BELL TELEPHONE COMPANY'S APPLICATION FOR APPROVAL OF PERSONALIZED RING PER LINE-RESIDENCE BUSINESS, ET AL

COMES NOW the General Counsel of the Public Utility Commission of Texas, representing the public interest, and files its comments on the Southwestern Bell Telephone Company (SWBT) LRIC Studies filed in Project No 14561

I.

General Counsel concurs with Commission Staff's (Staff) recommendation that SWBT be directed to file amended BNF LRIC studies in the above-referenced project within 60 days. Staff's recommendation is attached to this memorandum for all purposes as if stated herein word for word. As noted in Staff's recommendation, SWBT's LRIC Studies are not consistent with P.U.C. Subst. R. §23.91 in a number of instances as summarized at pages 94-95 for BNF LRIC Studies and at page 101 for Service LRIC Studies

Concerning the issue of the appropriate cost of money (rate of return) to be used in SWBT's cost studies, General Counsel would provide the following additional justification for Staff's recommendation SWBT proposes to use a 12.06 percent rate as its cost of money in these studies on the basis that this was the authorized rate of return in Docket No. 8585, SWBT's most recent rate case. General Counsel disagrees with this characterization. The 12.06 percent figure was a part of the incentive regulation plan established in Docket No. 8585. It represented the upper end of the band of earnings in which SWBT was not required to share its earnings with its ratepayers. However, the 12.06 percent figure was not used in setting SWBT's rates in Docket No. 8585.

The reformatted findings and conclusions from Docket No. 8585 reflect the following concerning the appropriate rate of return for SWBT:

> 137. The rate decreases provided in the Stipulation were the end result of negotiation and not based on an explicit cost of capital.
>
> 138. An implicit rate of return of 10.86 percent can be calculated by adjusting test year data for the effects of the Stipulation and the requirements of PURA and the PUC rules.
>
> 139. Another method of calculating an implicit rate of return from test year information results in a return for SWBT of 11.20 percent after adjustments are made for the effects of the Stipulation and the other adjustments required by PURA and PUC rules.
>
> 140. Both of the returns of SWBT, whether as calculated by General Counsel or by SWBT, fall into the overall cost of capital range found reasonable.
>
> *Petition of the General Counsel to Inquire into the Reasonableness of the Rates and Services of Southwestern Bell Telephone Company*, Docket No. 8585, 17 P.U.C. BULL 1045, at 1775, (Jan. 10, 1991).

Based upon these findings it is clear that SWBT's "most recent commission approved rate of return" (i.e., the rate of return implicit in the rates set by the Commission) was either 10.86 percent or 11.20 percent, not 12.06 percent as utilized by SWBT in these studies. However, General Counsel and Staff believe that such rates are not appropriate for use in the current cost studies.

P.U.C. Subst. R. §23.91(g)(8), which allows the use of "the most recent commission approved rate of return for the company, as that term is used in §23.21(c)(1) of this Title", only provides that the use of such rate will be presumed reasonable. General Counsel believes that there is a sufficient basis upon which to overcome the presumption in this proceeding and to require the use of a forward-looking cost of money factor.

First, as the Staff memo notes, SWBT has previously proposed and used a forward-looking cost of money in other cost studies filed under §23.91. Second, the Commission's own rules [§23.21(c)(1)] recognize that a rate of return "may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally." General Counsel asserts that the money markets and business conditions generally have changed considerably from November 29, 1990, when Docket No. 8585 was decided by the Commission. The use of this five-year old rate of return cannot be considered "forward-looking" and should not be used in the current cost studies. As evidence of these changed conditions, General Counsel would point to the report produced in Project No. 12562, <u>Staff Analysis of the Incentive Regulation Plan Established in Docket No. 8585: The First Three Years</u>. Table 7.2 of that report (copy attached) contains a comparison of SWBT's realized rates of return for the first three years of the plan with the Staff estimate of a reasonable rate of return for SWBT for the same period. Based upon an analysis of market conditions and SWBT's then current capital structure, Staff determined that a reasonable rate of return for SWBT declined from 10.93 percent during the test year (of 1989) to 10.01 percent in 1992 and 8.90 percent in 1993. As this comparison shows, SWBT's proposed 12.06 percent rate is more than one and one-third times the Staff calculated reasonable rate of return for 1993. While Staff does not argue for the use of the 8.90 percent rate, such comparison does help to demonstrate that the 12.06 percent rate is clearly out-of-date and unreasonable.

CONCLUSION

General Counsel respectfully urges the Administrative Law Judge to find that the affected LRIC Studies are not in compliance with P.U.C. Subst. R. §23.91 and direct SWBT to file amended BNF LRIC studies and Service LRIC studies in this project within 60 days as stated in Staff's Recommendation.

Respectfully Submitted,

Bret J. Slocum
Director - Legal Division

Patrick J. Sullivan
Assistant Director - Legal Division
State Bar No. 19488600

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PJS/le
Attachment
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PROJECT NO. 14561

CERTIFICATE OF SERVICE

I, Patrick J. Sullivan, Assistant Director, certify that a copy of this document was served on all parties of record in this proceeding on this 20th day of December, 1995 by First Class, U.S. Mail, Postage Pre-paid.

Patrick J. Sullivan
Assistant Director

Public Utility Commission of Texas

Memorandum

To: Patrick Sullivan
Assistant Director, Legal Division

From: A. Nelson Parish ANP
Economic Analyst, Competitive Issues Division

Date: December 20, 1995

Subject: Telephone Project No. 14561

Southwestern Bell Telephone Company's Application for Approval of Personalized Ring per Line - Residence/Business, Et Al., Pursuant to P.U.C. Subst. R. §23.91

Comments and Recommendations

The following comments address the above-noted SWBT Cost Studies. The BNF LRIC studies are the fourth set filed by SWBT and reviewed by Staff. Some of the BNF studies included in this project are the first BNFs filed by SWBT that require the use of the COSTPROG and LPVST computer models. However, one BNF LRIC study, that for Personalized Ring per Line - Residence/Business, uses the Switching Cost Information System reviewed by Staff in previously-filed SWBT BNF LRIC studies (See GC's Comment on Project No. 14091).

Staff takes special note of two major changes made by SWBT in the current LRIC studies. The first change is that SWBT has reintroduced annual charge factors which were deleted from earlier studies pursuant to Staff recommendation and the ALJ's order. The

Attachment 1